CLAIMS

What is claimed is:

1. A symbol generator for presenting information in an optical viewfinder comprising:
a first ESBG device having a front side facing towards the viewer and a rear side;
wherein said ESBG is sandwiched between first and second transparent plates;
wherein said transparent plates together function as a light guide;
wherein each said ESBG device contains information encoded in a multiplicity of separately switchable grating regions;
a plurality of independently switchable transparent electrodes elements, said independently electrodes substantially overlaying said separately switchable grating regions; and
means for coupling illumination into said transparent plates;
said ESBG being operative to project the images of said information towards said viewer when said ESBG rear side is illuminated using light of a first wavelength and no electric field is applied to said ESBG.

2. The symbol generator of claim 1, wherein said ESBG device provides a grating within each of said separately switchable regions and is clear elsewhere.

3. The symbol generator of claim 1, wherein said illumination means provides linearly polarized light.

4. The symbol generator of claim 1, wherein said illumination means is a Light Emitting Diode.

5. The symbol generator of claim 1, wherein said illumination means provides light having a limited bandwidth centered about a wavelength, and the maximum diffraction efficiency of said ESBG device occurs at approximately the same wavelength.

6. The symbol generator of claim 8, wherein said wavelength is about 620 nanometers.

7. The symbol generator of claim 1, wherein said separately switchable grating regions provide images of symbols.

8. The symbol generator of claim 1, further comprising an external diffuser.

9. The symbol generator of claim 1, wherein said separately switchable grating regions are configured to diffract light at different wavelength provided by a multiplicity of light sources of appropriate spectral output.

10. The symbol generator of claim 3, further comprising a third transparent plate and a second ESBG sandwiched between said second and third transparent plates;
wherein said first, second and third transparent plates together function as a light guide;
wherein each said second ESBG device contains information encoded in a multiplicity of separately switchable grating regions;
wherein said switchable grating regions of said first and second ESBGs substantially overlap;
said second ESBG being operative to project the images of said information towards said viewer when said ESBG rear side is illuminated using light of a second wavelength and no electric field is applied to said second ESBG.